

# Healthy Waters Program in the Coastal Zone

## **FY18, Task 8 Final Report**

Grant Period October 1, 2018 to March 31, 2021

Grant# NA18NOS4190152

Compiled by Todd Janeski, VCU, Department of Life Sciences

Virginia Department of Conservation and Recreation

Division of Natural Heritage

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## *Executive Summary*

The Environmental Scientist/Analyst with the Virginia Commonwealth University (VCU) Department of Life Sciences (LS), Rice Rivers Center (RRC), was retained by the Virginia Department of Conservation and Recreation (DCR), Natural Heritage Program (NHP) to serve as the Program Manager of the Virginia Healthy Waters Program (HWP). The HWP Manager also maintains access to the facilities and expertise of the DCR and continued to integrate the skills and abilities of VCU's LS/RRC program. The position serves as a liaison between DCR and the VCU LS/RRC to promote a coordinated, collaborative approach to integrating field capacity, applied research, and outreach to inform the protection of ecologically healthy aquatic systems. This includes the oversight of programs, projects, grants and grant budgets, providing technical support to DCR NHP and the Virginia Coastal Zone Management Program (CZM), as it relates to coastal zone ecology, management, and restoration. Additionally, this grant supported the Virginia Oyster Shell Recycling Program (VOSRP) at the VCU RRC as an effort of Healthy *Estuarine* Waters to reclaim waste oyster shell and return it to the Virginia portion of the Chesapeake Bay as part of habitat restoration activities.

### **Product #1: Program Growth and Administration Report**

The HWP is supported through funding from several grant sources including the CZM Section 306 as well as the United States Environmental Protection Agency (EPA)'s Section 319 Nonpoint Source Program and Chesapeake Bay Implementation Grant (CBIG). These sources fund various aspects of the Program including the administration and oversight, Program growth and expansion, improvement in capacity, acquisition and analysis of new data and data integration.

The HWP saw significant growth during the reporting period. Programmatically, the assessment of program resources and needs has been an ongoing process of discussions regarding staff resources with senior staff, data collection to support a statewide expansion and the development of internal staff capacity. Data gaps and data integration continued to be priorities to integrate existing VCU collected Interactive Stream Assessment Resource (INSTAR) data into the NHP data explorer with the creation of new Ecological Occurrences (EOs) and Stream Conservation Units (SCUs). Challenges to administering the HWP are development of new data to complete the statewide coverage, the resource and staffing needs to conduct field assessments, and the ability to result in measureable, on the ground conservation actions. This reporting period contributed to supporting a small percentage of two field staff from the NHP Assessment Section through the sampling season. This improved capacity permitted the collection of data by additional field personnel aside from specific grant related activities and staff at VCU. The data collected was still in raw during the grant reporting period and still requires the development of models to interpret such information to make relevant to the Program as a whole. This process provides the HWP the ability to identify and track trends in Healthy Waters (HW).

During the reporting period, the HWP Manager continued to participate in the Chesapeake Bay Program, Goal Implementation Team (GIT) for Healthy Watersheds. As part of this GIT, the

Program Manager put considerable effort toward the Chesapeake Bay Management Strategy development process, this included the coordination of DCR, the Virginia Department of Environmental Quality (DEQ), and the Virginia Department of Forestry (DOF). To continue the progress being made by the Commonwealth, the HWP Manager coordinated with DCR NHP staff to begin the process of conducting a threat assessment to the 2014 HW sites in the Chesapeake Bay. The outcome is an identified list of HW sites that are most vulnerable to changes and most likely to be lost to future changes to meet the goal of protecting 100% of the 2014 list by 2025.

An analysis and prioritization of the SCUs, for the purpose of identifying those SCUs deemed “most valuable”, continued to be a team effort to guide conservation planning on a watershed scale ensuring ecologically healthy aquatic conditions are maintained. This effort would be a slightly divergent tack from the more opportunistic approach of conservation targeting and direct efforts into specific areas of the Commonwealth. This builds upon the efforts in the Chowan basin and development of the *A-I Criteria for Ecologically Healthy Watershed Conservation* to identify conservation actions in Raccoon Creek (Nottoway River) and bridges the Heritage Sections of Healthy Waters, Assessment, Protection and Stewardship. To support this approach, the DCR HWP developed and submitted a proposal to the US Endowment of Forestry and Communities to support the HWP (**Figure 1** below). That proposal included a field position that would directly work in support of conservation and protection actions to ensure ecologically healthy aquatic conditions are maintained under the HWP and would have established a land trust to manage those protected resources. However, DCR was informed that despite the high ranking of the proposal, it was not awarded. Constructive feedback from the proposal indicated that the high ranking was due to the articulated need being met, but that it was not funded because the region was considered too small. This poses a new challenge of identifying an appropriate amount of fieldwork for field personnel to result in protected lands and directly, protected healthy waters sites. The partners of this application included the Virginia Chapter of The Nature Conservancy (TNC), the Albemarle-Pamlico National Estuary Partnership (APNEP), the North Carolina Department of Environmental Quality, DEQ, DOF, and a private land broker.

**Healthy Watersheds Consortium Grant Program | 2019 Application Version 1.9.19**

For more information, read the [Request for Proposals](#) or visit the [webpage](#).

Deadline: Monday, February 4, 2019, 8:00 p.m. EST.

- Copy this form to your computer before beginning so that you can save your work.
- We recommend reading through the entire application before constructing your responses.
- All character limits include spaces.

Questions? Peter Stangel ([peter@usendowment.org](mailto:peter@usendowment.org); 404-915-2763) or Jeff Lerner ([jalannlerner@gmail.com](mailto:jalannlerner@gmail.com); 202-236-1883)

**Submitting your Application**  
Only proposals submitted on this application form will be considered. This form, 3-5 letters of support and up to two maps (optional) should be combined into one document and emailed to [peter@usendowment.org](mailto:peter@usendowment.org). Receipt will be acknowledged within two business days.

Project Title (75 characters)	Healthy Waters Conservation in VA's SE Rivers
Date Submitted	02/04/19
Project Start and End Date	10/1/19-9/31/21

Contact Name	Todd Janeski
Organization	Va Dept of Conservation and Recreation, Natural Heritage Program
Mailing Address	600 East Main St., Richmond VA, 23219
Contact Email	Todd.Janeski@dcv.virginia.gov
Office Phone	804.371.8964
Mobile Phone	207.841.5345

**Project Type (check one):**

☐ Watershed Action Project  
☒ Building Watershed Protection Capacity  
☐ Advancing the State of Practice

**Funding Requested**

**Figure 1.** Screenshot of the Application Coversheet for application to HW Consortium Grant Program

## Product #2: Program Capacity Development Report

The HWP Manager met with a regional land broker to identify opportunities to inform land protection and direct acquisition. Several basins were identified with a specific focus on the Chickahominy River. The HWP Manager met with faculty to develop an internship, course or special study to permit those data to be cross-walked with INSTAR to inform the identification of opportunities most beneficial to the HWP. The 2017 sampling season included a focused assessment of the Chickahominy River in support of other CZM-funded projects and was completed and delivered to DCR in 2018. Although not directly specified in this grant's scope of work, the HWP Manager oversaw the delivery of products and data, to support that separate CZM-funded project. Please the CZM FY16, Task 93.02 final product for specific results of the

assessment.

Through funding from EPA 319, the HWP Manager continued to manage the process by which watersheds and waterbodies are identified as Healthy and how the Program communicates outward. Continued effort was put toward sharing and communicating the Stream Ecological Health Assessment for the Chowan River Basin, within both Virginia and North Carolina. More recently, the APNEP Director requested assistance from the HWP Manager in drafting an improved MOU between the states of North Carolina and Virginia that would advance land conservation goals, protection of aquatic integrity and implement the APNEP Comprehensive Conservation Management Plan. The HWP Manager's time in this effort was covered by this grant and the process may continue under subsequent Healthy Waters grants from CZM.

### **Product #3: Healthy Waters Data Analysis, Evaluation and revision of models relevant to interpreting Healthy Waters data**

Through funding from CZM and CBIG, the HWP manager, DCR staff, and VCU focused efforts into two new assessment areas. The first was to look at the protection measures implemented by local partners to protect lands in the Dragon Run watershed with the outcome to determine if lasting effects would be realized on identified healthy waters sites. This GIS-based change analysis will be an important tool for TNC, Natural Heritage, and DEQ to determine if land conservation actions will have a direct benefit on maintaining ecological health in aquatic systems. Second, the team partnered with DOF to develop an analysis of those areas with applied forestry best management practices (BMPs) to be surveyed to determine if those protection and conservation actions have resulted in maintaining those sites identified as ecologically healthy. DOF shared an extensive geospatial coverage of harvested catchments in the Chesapeake Bay basin of Virginia to inform this analysis. VCU will continue to use GIS tools to identify timbered (clear-cut) catchments that were assessed by INSTAR/HWI during previous years, thus providing the unique opportunity to conduct pre- and post-harvest stream assessments based on standardized protocols for ecological assessment. This work will be the first such assessment conducted in Virginia and represents a unique opportunity to partner with DOF on possible logging impacts to aquatic resources. Conversely, the work could validate established protocols for low-impact timber harvest in Virginia. The Commonwealth has committed to the Chesapeake Bay Program Healthy Watershed Goal of protecting 100% of those healthy waters sites identified in the 2014 data. The Commonwealth has few opportunities for direct comparison across years with the added benefit of using similar methods and datasets. These results will inform and outline a planned approach to land conservation in an important Chesapeake Bay watershed but also to meet the Bay Program Healthy Watershed Goal. At the time of this report submittal to CZM, the analysis of the DOF BMP's remains an unpublished graduate student thesis currently under review and not available for public consumption. The potential value of the analysis stated herein is a result of conversations between the HWP Manager and the graduate student to date.

The HWP Manager also continued to meet with both the James River Association (JRA) to discuss how the INSTAR data and HWP might inform their protection actions in their respective regions. Currently, JRA continues to base protection recommendations on guidance from the Eastern Brook Trout Joint Venture that generalizes conclusions about watershed condition and habitat suitability

for brook trout. Improved data sharing of the INSTAR and prioritizations of SCUs would do much to advance those efforts. The HWP Manager also met with EPA Region 3 Office to discuss better integrating HWP data into the Watershed Resources Registry (<http://watershedresourcesregistry.com/>).

#### **Product #4: Estuarine Healthy Waters, Oyster replenishment in the Coastal Zone**

A small portion of this grant from CZM directly supports VOSRP's efforts to reclaim waste oyster shell and return it to the Virginia portion of the Chesapeake Bay. The grant supported the development of banners, stickers, purchase of containers and supported the bulk movement of shell from local storage sites to the VCU RRC. The Program saw considerable growth during the project period with expansion of operations that included a continued broadening of the geography of the shell collection to support larger restoration efforts. The majority of support sustaining the Program is from an anonymous charitable contribution but also is supported through assistance from the VCU Foundation, Keep Virginia Beautiful, Virginia Green Travel Alliance, Dominion Energy, and other small donations.



The program's growth into applied restoration took a significant increase in effort. Partnerships with the commercial fishing industry continues to realize benefits to returning shell to the ecosystem. The partnership with J&W Seafood increased to include support from EJ Wade Construction to assist in bulk movement of shell from the RRC to Gwynn's Island. This increase in capacity allowed a planting season which resulted in returning nearly 7 million oysters to the Piankatank River. The program expansion also included a new partnership with TNC and the Virginia Marine Resources Commission (VMRC) to develop 15 new acres of sanctuary reef with crushed stone that was covered in a veneer of spat on shell from recycled program shell. A press event was held in the summer of 2018 to celebrate the partnership and creation of new areas. CZM funding provided in this grant was used to support the acquisition of wild source, diploid eyed oyster larvae for use in the field work. Approximately eight million larvae were procured from one of VA's private hatcheries at the market price (details of price and source, withheld to protect competitive nature of the private sector). Photographs documenting this work are included below.







The VOSRP was also visible at several additional events during the reporting cycle, including a private event at the Virginia Executive Mansion, two Ducks Unlimited oyster roasts, the Oystoberfest event and several times on CBS6 and on the Virginia This Morning Show. The VOSRP manger met with Chesterfield County to explore expanding the program into the County and began conversations with the Northern Virginia Regional Commission (NVRC) to develop the Program in northern Virginia.